REMARKS

In the present application, claims 1-29 are pending. Claims 1-29 are rejected.

Amendments to the Claims

In order to advance the prosecution of this patent application to issuance, and without expressly or impliedly admitting that the Applicants are in agreement with the Examiner's rationale for the rejections of claims 22 and 27 the Applicants have amended claims 22 and 27. These amendments are supported throughout the specification and in particular in page 9, lines 25-26. No new matter is added.

Claim Rejection - 35 USC § 101

The Examiner has rejected claims 22, 27, and 28 under 35 U.S.C. 101 as failing to establish a statutory category of invention. The Applicants assert that claims 22, 27, and 28 as presently presented establish a statutory category of invention. Therefore, the Applicants request the Examiner remove this rejection.

Claim Rejection - 35 USC § 103 (a)

The Examiner has rejected the Applicants' claims 1-29 as being unpatentable under 35 U.S.C. 103(a) over Bayeh, et al. (U.S. Patent No. 6,098,093), herein Bayeh, and Shachor (U.S. Patent No. 6,947,992), herein Shachor. The applicant includes the following comments to clearly distinguish the claimed invention over the art cited by the Examiner, and respectfully requests a favorable reconsideration of claims 1-29.

It is well established law that in order for an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case for obviousness. Thus, as interpreted by the Courts, the Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the prior art and that in accordance with In re Lee, the prior art must contain a suggestion, teaching, or motivation for one of ordinary skill in the art to modify a reference or combine references; and that the proposed modification must have had a reasonable

expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made.[1]

The Examiner attempts to use Shachor as prior art. However, Shachor has a filing date of May 1, 2000. The present application claims priority to PCT/FI00/00572 which has a priority date of June 24, 1999, almost a full year before the filing date of Shachor. Clearly, Shachor is not valid prior art and therefore may not be used as a basis for a 35 U.S.C. 103(a) rejection. Therefore, the rejections to claims 1-29 a clearly improper and the Applicants request the Examiner remove these rejections. For at least, this reason claims 1-29 are in a condition for allowance.

Exemplary embodiments of the disclosed invention attempt to solve the problems detailed at page 2, line 18 to page 6, line 19. In particular, Applicants have determined that many sessions can be created for a system which includes mobile terminals. These sessions can remain open for days or even weeks and can be active or inactive (see page 5, lines 7-26). Furthermore, a gateway server has difficulty managing such a large number of sessions. Consider: "[A]ssigning one thread to each session is an inefficient use of system resources. On the other hand, having only one thread to handle all events of all sessions is also inefficient because the thread may not process the events more quickly than they are generated in the protocol stack" (page 6, lines 1-4). Moreover, allocating several threads to the same session also has associated problems, as detailed at page 6, lines 6-19.

The Applicants determined that grouping sessions and assigning a thread to each group of sessions would solve or at least ameliorate the aforementioned and other problems. FIG. 4 of the application is presented below:

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1 In Re Fine5 U.S.Q.2d 1596, 1598 (Fed. Cir. 1988); In Re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); Agmen v. Chugai Pharmaceuticals Co., 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996); In Re Sang Su Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

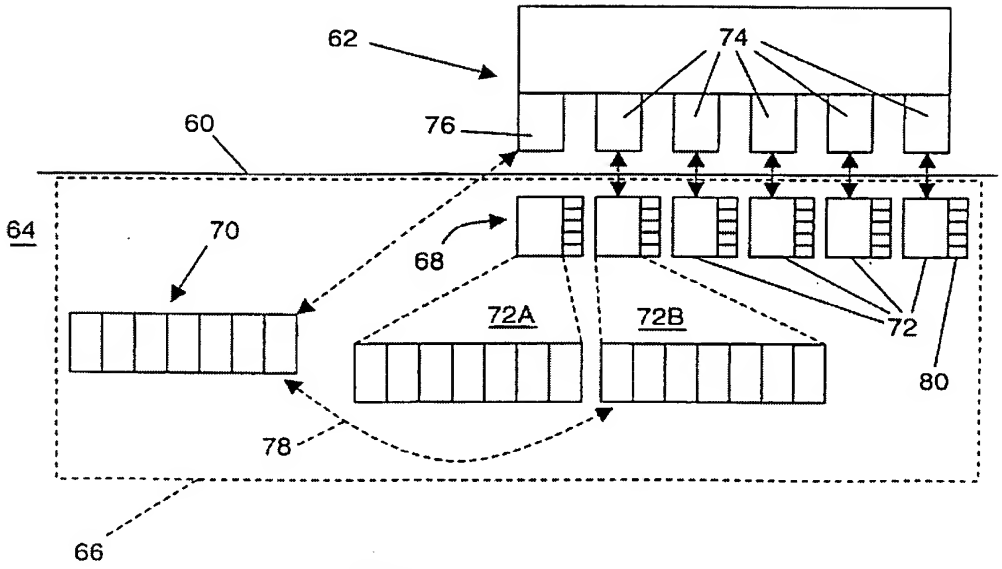


Fig. 4

In this example, unassigned sessions 70 are assigned by an acceptor thread 76 to one of the threads 74. Each of the threads 74 is assigned to a group of sessions 72 (see page 12, line 14 – page 13, line 2). "Each group of sessions has a queue 80 that contains events arising in that group" (page 13, lines 11-12).

With regard to some of the terminology used in the claims, Applicants assert that "[a] ***session*** is a series of interactions between a terminal and a server having a well-defined beginning and end and involving agreed-upon characteristics" (page 2, lines 19-21, emphasis added). Applicants also assert: "A ***thread*** is basically a path of execution through a program and can be the smallest unit of execution that is scheduled on a processor. A thread consists of a stack, the state of the CPU registers, and an entry in the execution list of the system scheduler" (page 4, lines 10-13, emphasis added).

Regarding claim 1, which recites:

> "A method of managing a plurality of sessions, the sessions being between a plurality of terminals and a server having a plurality of threads, the method comprising:
>
> assigning the **sessions to a plurality of groups** such that at least some of the groups have multiple sessions;

> assigning **a thread to each group of sessions**; and
> sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions" (emphasis added).

It is respectfully submitted that none of the properly cited references includes the unique features of independent claim 1 and in particular the subject matter of "assigning a thread to each group of sessions; and sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions". A thread is assigned to each group of ***sessions***, which means that each group corresponds to multiple sessions in the subject matter of "assigning a thread to each group of sessions so that the assigned thread only handles the events of that group of sessions".

As the Examiner has noted, "Bayeh does not specifically state grouping the sessions into a plurality of groups, rather routing the sessions to the web servers based on a load-balancing algorithm". Clearly, Bayeh does not disclose or suggest "assigning the sessions to a plurality of groups such that at least some of the groups have multiple sessions" as in claim 1. As noted above, Shachor is not a properly cited reference and may not be combined with Bayeh as a basis for a rejection. Therefore, for at least this reason, claim 1 is in a condition for allowance.

As Bayeh does not disclose or suggest "assigning the sessions to a plurality of groups such that at least some of the groups have multiple sessions" as in claim 1. It follows that Bayeh does not disclose or suggest "assigning a thread to each group of sessions". As noted above, Shachor is not a proper prior art reference and may not be combined with Bayeh as a basis for a rejection. Therefore, for at least this reason, claim 1 is in a condition for allowance.

As claims 18, 21, 22, 24, and 27 recite similar language to that discussed above with reference to claim 1, claims 18, 21, 22, 24, and 27 are likewise in condition for allowance.

Claim 18 recites:

> "A server for managing a plurality of sessions with a plurality of terminals, the server comprising a plurality of threads, first assigning means for assigning the **sessions to a plurality of groups** such that at least some of the groups have multiple sessions, second assigning means for assigning **a thread to each group of sessions**, and means for sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only

handles the events of that group of sessions" (emphasis added).

Claim 21 recites:

"A communications system comprising a server and a plurality of terminals, the server and the terminals conducting a plurality of sessions, the server comprising a plurality of threads, first assigning means for assigning the **sessions into a plurality of groups** such that at least some of the groups have multiple sessions, second assigning means for assigning **at least one thread to each group of sessions**, and means for sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions" (emphasis added).

Claim 22 recites:

"A computer readable medium storing a computer program product for managing a plurality of sessions, the sessions being between a plurality of terminals and a server having a plurality of threads, comprising:

computer readable program means for assigning the **sessions to a plurality of groups** such that at least some of the groups have multiple sessions;

computer readable program means for assigning **a thread to each group of sessions**; and

computer readable program means for sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions" (emphasis added).

Claim 24 recites:

"A server for managing a plurality of sessions between the server and a plurality of terminals, the server comprising at least one processor configured to create a plurality of threads in response to at least the sessions and to assign the **sessions to a plurality of groups** such that at least some of the groups have multiple sessions, the at least one processor configured to assign **a thread to each group of sessions**, and configured to send events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions" (emphasis added).

Claim 27 recites:

"A computer readable medium storing a computer program product for managing a plurality of sessions, the sessions being between a plurality of terminals and a server having a plurality of threads, the computer program product tangibly embodying a program of machine-readable instructions executable by at least one processor to perform operations comprising:

assigning the **sessions to a plurality of groups** such that at least some of the groups have multiple sessions;

assigning **a thread to each group of sessions**; and

sending events for any sessions assigned to a group to a corresponding assigned thread so that the corresponding assigned thread only handles the events of that group of sessions" (emphasis added).

As all of claims 2-17, 19-20, 23, 25-26 and 28-29 depend upon claims 1, 18, 21, 22, 24, and 27, they are likewise in condition for allowance. However, in order to fully address the Examiner's rejections regarding dependent claims 2-17, 19-20, 23, 25-26 and 28-29, the Applicants submit the comments below.

The Examiner asserts the following: "'Official Notice' is taken that both the ***concept and advantages of providing for*** static load balancing techniques are well known and expected in the art" (emphasis added). Applicants cannot determine the metes and bounds of this statement. What are the concept and advantages being relied upon? Further, what is asserted to be well known: the providing for static load balancing techniques, or the static load balancing techniques themselves (or both)?

For at least these reasons, **Applicants contest each one of the following assertions**:

"By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for static load balancing techniques are well known and expected in the art" (in a rejection corresponding to claim 5).

"By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for relative load balancing techniques are well known and expected in the art" (in a rejection corresponding to claim 7).

"By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for random load balancing techniques are well known and expected in the art" (in a rejection corresponding to claim 8).

"By this rationale, 'Official Notice' that both the concepts and advantages of providing for sessions which remain open until closed is well known in the art" (in a rejection corresponding to claim 12).

"By this rationale, 'Official Notice' that both the concepts and advantages of providing for cellular telephones and mobile terminals as the terminals is well

known and expected in the art" (in a rejection corresponding to claims 13 and 14).

"By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for using the WSP protocol for sessions is well known and expected in the art" (in a rejection corresponding to claim 17).

The Applicant's respectfully request that the examiner provide references that show that these "concepts and advantages" are "well known and expected in the art".

Assuming, *arguendo*, that the Examiner's asserted Official Notice statements are taken as being true (which Applicants do not assert), the dependent claims are still patentable in the context of the subject matter of independent claims along with the subject matter of the dependent claims, as is shown below.

Regarding claim 5, which recites:

"A method according to claim 1 in which sessions are assigned statically to particular groups and therefore to particular threads" (emphasis added).

Assuming for sake of argument that the following statement is true (which Applicants do not assert): "By this rationale, 'Official Notice' is taken that ... static load balancing techniques are well known and expected in the art". This statement is used in a rejection of claim 5. While load balancing could be used with the disclosed invention, there is no mention of load balancing in claim 5. Claim 5 does not recite that sessions are assigned statically to particular threads ***in order to balance load between the particular threads***, which is what the Examiner appears to argue. Therefore, claim 5 is patentable even if "load balancing techniques are well known and expected in the art".

Regarding claim 5 in conjunction with claim 1, which recites in part "grouping the sessions into a plurality of groups" and "assigning a thread to each group of sessions so that the assigned thread only handles the events of that group of sessions". Even if the statement of "By this rationale, 'Official Notice' is taken that ... static load balancing techniques are well known and expected in the art" is taken as true (which Applicants do not assert), it is not known or expected to statically assign sessions to particular threads, where a thread is assigned to each group of sessions so that the assigned thread only handles the events of that group of sessions. Certainly

Bayeh does not disclose or imply as such, as Bayeh performs load balancing of requests to web servers based on "policies implemented in load-balancing host software" (see col. 8, lines 49-58), and there is no disclosure or implication of static assignment of sessions to particular threads, where a thread is assigned to each group of sessions so that the assigned thread only handles the events of that group of sessions.

For at least these reasons, claim 5 is patentable over Bayeh and the Examiner's Official Notice.

Regarding claim 6, which recites:

> "A method according to claim 1 in which assigning sessions further includes assigning a session to a first group in a first time period **before suspension** of the session and assigning the session to a second group in a second time period **following resumption of the session**" (emphasis added).

The Examiner appears to be using hindsight analysis in the rejection to claim 6. Not only does there not appear to be any disclosure or implication in Bayeh that a session can be suspended and then subsequently resumed, there does not appear to be any disclosure or implication in Bayeh that upon resumption a session would be placed into a second group (and therefore assigned to a different thread). As noted by the Examiner "Bayeh does not specifically state grouping the sessions into a plurality of groups".

Furthermore, even if threads could be suspended and subsequently resumed, it should not be considered obvious that a session would be placed into a different thread after resumption. There is certainly no teaching or implication in either Bayeh of this. Clearly, Bayeh does not suggest or disclose "assigning a session to a first group in a first time period before suspension of the session and assigning the session to a second group in a second time period following resumption of the session" as in claim 6. Therefore, Bayeh does not make obvious claim 6. For at least this reasons, claim 6 is patentable over Bayeh and the Examiner's Official Notice.

As claims 25 and 28 recite similar language to that discussed above with reference to claim 6, claims 25 and 28 are likewise in condition for allowance.

Claim 25 recites:

> "A server according to claim 24 in which the at least one processor is

configured to assign a session to a first group in a first time period **before suspension** of the session and is configured to assign the session to a second group in a second time period **following resumption of the session**" (emphasis added).

Claim 28 recites:

"A computer program product according to claim 27 in which the operation of assigning sessions further includes the operations of assigning a session to a first group in a first time period **before suspension** of the session and assigning the session to a second group in a second time period **following resumption of the session**" (emphasis added).

As claims 7-8 depend upon claim 6, they are likewise in condition for allowance.

Regarding claim 7, which recites:

"A method according to claim 6 in which the second group is chosen on the basis of the relative levels of activity of the first and second groups".

As noted above, Bayeh does not disclose or suggest claim 6. Furthermore, the Examiner takes Official Notice of the following:

"By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for relative load balancing techniques are well known and expected in the art".

Even if the statement of "By this rationale, 'Official Notice' is taken that ... relative load balancing techniques are well known and expected in the art" is true (which Applicants do not assert), claim 7 is still patentable, as it is not known or expected to choose a second group on the basis of the relative levels of activity of the groups, where a session is put into a first group in a first time period before suspension and put into a second group in a second time period following resumption, and where a thread is assigned to each group of sessions so that the assigned thread only handles the events of that group of sessions The Examiner asserts that one could modify Bayeh to include [relative] load balancing techniques (note that the Examiner only says that one could modify Bayeh to include "load balancing techniques", but it appears that the term "relative load balancing techniques" is implied).

Even if one could modify Bayeh to include relative load balancing techniques, it appears that those techniques would be related to relative load balancing of requests to web servers and not to where a "second group is chosen on the basis of the relative levels of activity of the first and second groups", where a session is put into "a first group in a first time period before suspension of the session" and into "a second group in a second time period following resumption of the session", and where a thread is assigned to each group of sessions so that the "assigned thread only handles the events of that group of sessions", as in claims 7, 6, and 1.

Moreover, even if load balancing techniques are well known to those skilled in the art, the load balancing described in Bayeh relates to load balancing of *requests*, which may or may not relate to sessions when the requests are load-balanced. In other words, Bayeh does not appear to perform load balancing of *sessions*.

For at least these reasons, claim 7 is patentable over Bayeh and the Examiner's Official Notice.

Regarding claim 8, which recites:

> "A method according to claim 6 in which the second group is chosen randomly" (emphasis added).

As noted above, Bayeh does not disclose or suggest claim 6. Furthermore, the Examiner gave a statement of Official Notice of the following:

> By this rationale, 'Official Notice' is taken that both the concept and advantages of providing for random load balancing techniques are well known and expected in the art.

Even if the statement is true (which Applicants do not assert), claim 8 is still patentable. The Examiner asserts that one could modify Bayeh to include random load balancing techniques

Even if one could modify Bayeh to include random load balancing techniques, it appears that those techniques would be related to random load balancing of requests to web servers and not to where a "second group is chosen on the basis of the relative levels of activity of the first and second groups", where a session is put into "a first group in a first time period before suspension of the session" and into "a second group in a second time period following resumption of the

session", and where a thread is assigned to each group of sessions so that the "assigned thread only handles the events of that group of sessions", as in claims 8, 6, and 1.

Moreover, even if load balancing techniques are well known to those skilled in the art, the load balancing described in Bayeh relates to load balancing of *requests*, which may or may not relate to sessions when the requests are load-balanced. In other words, Bayeh does not appear to perform load balancing of *sessions*.

For at least these reasons, claim 8 is patentable over Bayeh and the Examiner's Official Notice.

Regarding claims 19-20 and 23 the examiner states that they are: "rejected for similar reasons as stated above". However, these claims recite material not found in the mentioned claims (claims 1-17).

Claim 19 recites:

> "A server according to claim 18 comprising a **gateway server** serving sessions from a plurality of mobile terminals" (emphasis added).

Claim 20 recites:

> "A server according to claim 19 comprising **a Wireless Application Protocol-Hypertext Transfer Protocol (WAP-HTTP) gateway**" (emphasis added).

Claim 23 recites:

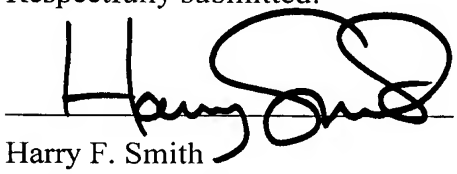
> "A server according to claim 18 in which the **first assigning means and the second assigning means are the same means**" (emphasis added).

The Applicants respectfully request the Examiner state with particularity the basis for these rejections. Without such basis for these rejections it is deemed that claims 19-20 and 23 are in a condition for allowance.

In light of the discussion above, the Applicants respectfully assert that a prima facie case for obviousness was not presented as required by the court in In re Lee. As such, the Applicants respectfully request that the Examiner reconsider and withdraw these rejections to claims 1-29.

For the foregoing reasons, the Applicants believe that each and every issue raised by the Examiner has been adequately addressed and that this application is in a condition for allowance. As such, early and favorable action is respectfully solicited.

Respectfully submitted:



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